

Non-technical abstract

Treatment of patients with advanced epithelial ovarian cancer using anti-CD3 stimulated peripheral blood lymphocytes transduced with a gene encoding a chimeric T-cell receptor reactive with folate binding protein

Ovarian cancer is the leading cause of gynecologic cancer death in the United States, and is the fourth most frequent cause of cancer death in women. There are over 24,000 new cases of ovarian cancer annually in the U.S., resulting in 13,600 deaths. Ovarian cancer is usually without symptoms until it is at an advanced stage. Although treatment with chemotherapy can result in significant shrinkage of tumor, chemotherapy does not increase rates of cure.

In an attempt to develop a novel therapy for ovarian cancer, we plan to remove lymphocytes, a type of immune cell, from patients and modify them in the laboratory with a gene that will allow the lymphocytes to recognize and destroy ovarian cancer. This system has been shown to function in laboratory experiments using cultured cell lines, as well as in mouse tumor model systems.

After expanding the genetically-altered cells in the laboratory using their growth factor, interleukin-2 (IL-2), we plan to reinfuse these lymphocytes into the patient, along with IL-2. We hope that the transferred cells will have the ability to recognize and destroy ovarian cancer in the patients. In addition, we hope that this study will help us determine the toxicity and appropriate dose for these cells.